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KISHORE, G

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☒ Claims 1-10 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-10 are rejected.

5. ☐ Claims _____ are objected to.

6. ☒ Claims 1-10 are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☒ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☒ been received ☐ not been received ☐ been filed in parent application, serial no. _____ ; filed on _____.

13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

The statement made on lines 29-32, page of 6 of the specification is confusing. Do applicants intend to convey that the ratio of HCG to citrate is 1: less than 10,000 in the other way around?

Claims 1-10 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

Claims 1-10 are rejected under 35 U.S.C. § 112, first paragraph, as the disclosure is enabling only for claims limited

citrate, tartarate, aspartate and glutamate as salts of dicarbonylic acids; sucrose and trehalose as sugars and as set forth below. See M.P.E.P. 88 706.03(n) and 706.03(z).

Applicants do not adequately teach in the specification, which of the dicarbonylic acid salts or sugars other than those stated above, could be used in the practice of the invention.

Claim 1 must recite the ratios of gonadotropin to dicarbonylic acid.

Claim 2 which recited non-ionic surfactant without amounts is non-enabling.

The limitation, "200-12,000 parts" in claim 8, has no support in the specification. Similarly the limitation, ionic strength of 0.05 to 0.35 has no support in the specification.

Finally, the specification is inadequate in teaching how to make a composition containing dicarbonylic acid salts plus non-ionic detergents or the effectiveness of the combination on gonadotropin stability. The specification contains no data on this combination.

Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "stabilized" in claims is deemed to be indefinite since it is unclear as to what it is stabilized against; storage, humidity, precipitation, heat or other factors? The term is a relative term. A composition which is stable for 2 months is relatively more stabilized than the composition which is stable for a month and a half. The term "effective amount" in claim 1 is thus deemed to be indefinite since the exact function is unclear. The amounts or ratios of gonadotropin and dicarbonylic acid salts must be recited. The specific dicarbonylic acid salts should also be recited.

Claims 7 and 10 are indefinite since it is unclear as to what "two types" and "one type" represent. Applicants must recite the gonadotropins. These claims are further indefinite since they are not further limiting claims 1 and 2 they are dependent from. Claims 1 and 2 recite gonadotropin in singular form.

"At least one gonadotropin" in claim 10 is indefinite since it is unclear as to what gonadotropin applicants are referring to. The gonadotropins included should be specified. The units of ionic strength must also be specified.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1, 2, 6-10 are rejected under 35 U.S.C. § 103 as being unpatentable over Kawaguchi et al or Hamilton et al.

Kawaguchi et al disclose lyophilized erythropoietin preparations containing stabilizers sucrose and diluted [illegible]

the abstract; column 1, line 64-column 2, line 14). The combination and amounts are taught on column 2, line 12 et seq.). Kawaguchi et al however, do not teach gonadotropin(s) or specific amounts of sucrose and citrate.

Hamilton et al teach compositions in dry state containing growth hormones, non-reducing sugars and citrates (note the abstract, column 2, lines 50-60; column 3, line 55 et seq; line 63 et seq; column 4, line 51 et seq.) Aspartate and glutamate are disclosed on column 5, line 43 et seq. Hamilton et al however, neither teach the hormone, gonadotropin or the amounts of stabilizers in the combination.

The use of stabilizers as taught by Kawaguchi et al or Hamilton et al for stabilizing gonadotropins would have been obvious to one of ordinary skill in the art, since the active compounds being stabilized in both prior art and instant inventions are functionally active and unstable proteins. The reference of Hamilton et al in particular, is also directed to a hormone as in the instant invention. The ratios of dicarboxylic acid salts to non-reducing sugar recited in instant claims are

deemed to be obvious manipulation of amounts an artisan would make to obtain best possible stabilizing effect.

The nominal method of mixing the components and lyophilization as recited in claim 10 is deemed to be well known in the art and also taught by Kawaguchi et al.

Claims 3-5 and 10 are rejected under 35 U.S.C. § 103 as being unpatentable over Yamuchi et al or Hirao et al.

Yacuchi et al disclose stable lyophilized interleukin 2 compositions containing succinates, tartarates or citrates and a surfactant (column 2, lines 50-60) a method of lyophilization (column 2, lines 18-52). It is deemed that it would be obvious to one of ordinary skill in the art that the generic term surfactant includes non-ionic surfactant.

Hirao et al disclose lyophilized compositions containing fibronectin, sucrose and a non-ionic detergent (note the abstract, column 2, line 44 et seq.; column 3, line 15 et seq. and Table 2).

Although either of the above references do not specifically teach gonadotropin, it would have been obvious to one of ordinary

skill in art to substitute gonadotropin for interleukin or fibronectin taught by prior art since all of these are biologically active proteins.

The references of Janchi et al, Binder et al, Fernandez et al, Hirai et al, Eppstein et al, Ferries et al which teach protein stabilizers are cited of interest.

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I. Claims 1-8 and 10 are, drawn to lyophilized compositions containing gonadotropin, classified in Class 424, subclass 499.

II. Claim 10 is, drawn to a method of making the composition, classified in Class 530, subclass 399.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2)

that the product as claimed can be made by another and materially different process (M.P.E.P. § 806.05(f)). In the instant case, (a) the process as claimed can be used to make a materially different product containing gonadotropin or any other protein, salts of dicarboxylic acid and non-ionic detergents, (b) the product as claimed can be made by a materially different process such as mixing gonadotropin with a solution containing dicarboxylic acid salts and also non-reducing sugars.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, have acquired a separate status in the art as shown by their different classification restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species of the claimed invention: (1) composition containing dicarboxylic acids salts, non-reducing sugar (claims 1, 2, 6-8) (2) dicarboxylic acid salts, non-ionic detergent (claims 3-5).

Applicant is required under 35 U.S.C. § 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, 1 and 10 are generic.

Applicant is advised that a response to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. § 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. M.P.E.P. § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103 of the other invention.

Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

Any inquiry concerning this communication should be directed to S.C. Kitchen at telephone number (703) 308-2440.

GSK

S.C. Kitchen:jr
July 12, 1991
703-308-2440

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SUPERVISORY PATENT EXAMINER
ART UNIT 152